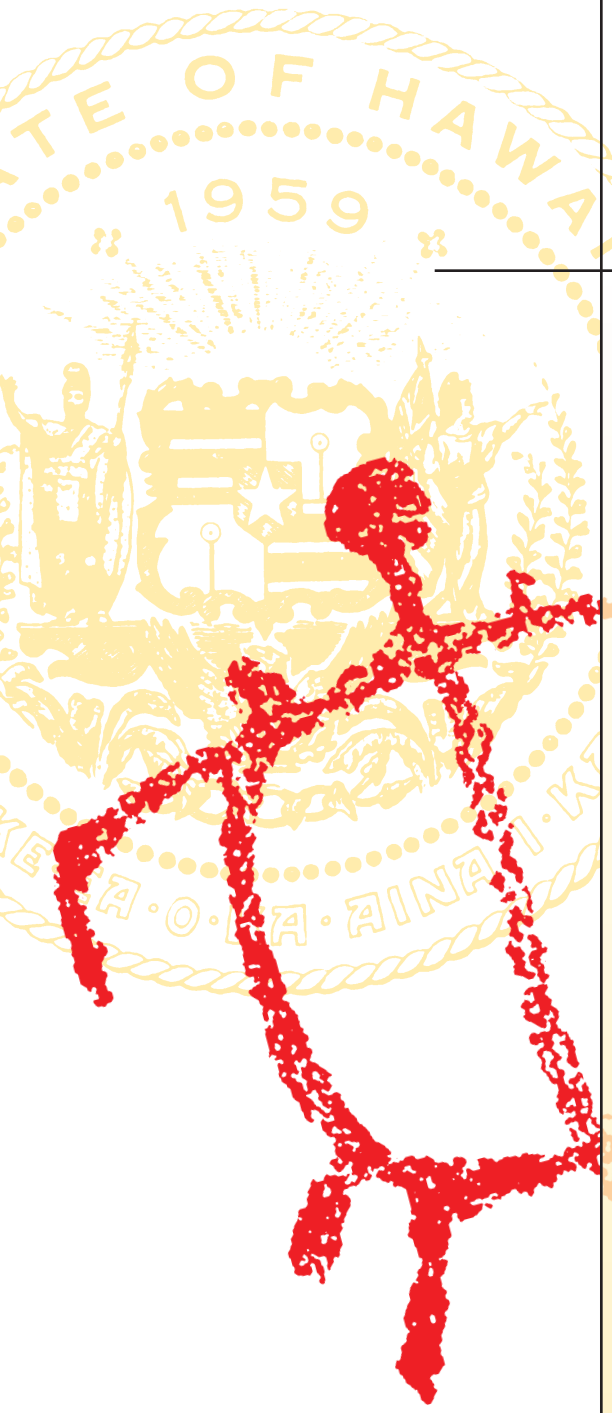

DIVISION OF AQUATIC RESOURCES

Surrounded by water, Hawai‘i is truly an "Ocean State." As fishermen, divers and other ocean users know, Hawai‘i's aquatic resources are central to our state's culture and economy. Our marine and freshwater resources impact nearly every aspect of life in Hawai‘i, from our drinking water which trickles through our majestic mountains, to the ocean which provides us with food and recreation activities that attract both residents and visitors from around the world. DLNR's goal of sustainability is aimed at preserving the quality of life for residents and keeping

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Hawai‘i a favored tourist destination by protecting what makes Hawai‘i unique — our island environment.

Hawai‘i’s inter-island waters are one of the world’s most important humpback whale habitats and the only place in the U.S. where humpbacks reproduce. Scientists estimate that two-thirds of the North Pacific humpback whale population migrate to Hawai‘i each winter to breed, calve and nurse in the warm Hawaiian waters. For this reason, Congress in 1992 designated the Hawaiian Islands Humpback Whale National Marine Sanctuary to protect the humpback whale and its Hawaiian habitat.

DLNR and the National Oceanic and Atmospheric Administration (NOAA) are co-managers for the sanctuary. On June 5, 1997, Governor Cayetano approved the sanctuary’s management plan. Together the partners have begun to implement a cooperative program for marine education concerning humpback whales. Our aim is to gain public, interagency and international cooperation in the protection of whales and their habitat.

To protect Hawai‘i’s ocean and stream ecosystems, the Division of Aquatic Resources (DAR) is charged with managing the fourth longest coastline in the U.S., that consists of 410,000 acres of coral reef, 565 million acres of ocean and 376 perennial streams. Yet its aquatics budget has dropped from 47th to 48th in the country during this biennium. As a result, DLNR faces an even more significant challenge to protect and enhance the sustainability of these resources, and to reverse the declining environmental and species survival trends of the past several decades.

The Division of Aquatic Resources manages the state’s marine and freshwater biological resources through programs in commercial fisheries and aquaculture, aquatic resources protection, recreational fisheries, and enhancement and education. Its major program areas include projects to maximize Hawai‘i’s commercial fisheries and aquaculture productivity, protect native aquatic species and their habitats, and provide facilities and opportunities for recreational fishing.

Aquatic Resources faces many challenges as it fights to protect Hawai‘i’s ocean and stream resources. The value the ocean brings to our economy, health and quality of life makes it critical that we ensure the sustainability of the state’s aquatic resources. The ocean alone brings in over $3 billion each year in gross revenue to the state’s economy, through commercial fishing, ocean recreation, shipping, aquaculture, and research and development. Ocean recreation is the fastest growing segment of Hawai‘i’s tourism industry.

Faced with the pressure of these industries and competing users, the responsibility for managing these aquatic resources is an urgent priority for DLNR. People come to Hawai‘i to view and swim in our ocean, to enjoy fishing, diving and boating, and to lie upon our beaches. Yet the ocean features which attract tourists and sustain the life of our local residents are at risk. Our nearshore fisheries are in serious decline, and this trend has been observed for a very long time. Close to one-fourth of our reef species are endemic — found nowhere else in the world. Our coral reefs compromise roughly 80% of the total coral reef area under U.S. jurisdiction. Coral habitats and the reef fish they sustain have been heavily impacted by development, pollution and overfishing. We are at a critical turning point in Hawai‘i’s history with regard to taking care of our ocean resources.

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To address these resource management concerns, Governor Cayetano supported passage of his Ocean State Initiative in the 1997 Legislature. This support brought an additional $1.72 million to the state's aquatic resources funding to hire six new staff in FY 1998 and FY 1999. In addition DLNR received an additional $1.67 million in the biennium to hire 14 new enforcement officers for the Division of Conservation and Resources Enforcement. As a result, efforts have been expanded in restoration of our nearshore fisheries, protection of coral reef habitats, understanding of the vital relationship between stream flows and the ocean environment, better management of our commercial fisheries, and increased enforcement capacity.

We still have a long way to go. Per capita spending for fisheries management in Hawai'i remains at very low levels compared to other states; for example, it is six times greater in Wyoming, seven times greater in Idaho, and 52 times greater in Alaska. Nevertheless, progress is being made. The 1997 budget increase has enabled collection of the types of data we need in order to make sound and timely decisions about our fisheries resources. As a clearer picture of what's happening with our marine resources emerges, we will be able to make management proposals that have the best chance of success.

HIGHLIGHTS

Implementation of the Governor's Ocean State Initiative has allowed DLNR to add badly needed staff expertise on coral reefs, reef fishes, and planning. Aquatic Resources will be able to focus more attention on coral reefs, which are at risk from a number of locally manageable hazards, such as sediment loading and pollution, and overfishing. There is also increased impact from visitor activities which can lead to damage caused by snorkelers, divers, and boat anchors. In addition, coral bleaching seems to be increasing here and globally, perhaps as a result of climate changes such as El Niño or global warming. The division needs to be able to assess the impact of these factors if effective corrective measures are to be applied.

For this reason, the Division of Aquatic Resources co-sponsored and coordinated an international coral reef monitoring workshop in Hawai'i in June 1998. The workshop's purpose was to set direction and establish a consensus on a coral reef monitoring program for inclusion in a management plan for Hawai'i's reefs. The monitoring workshop included suitable methods for measuring requisite parameters, strategies for use of local volunteers for data collection and community education, prioritization of research needs related to monitoring, establishment of a data base management system for Hawai'i's reefs and review of the workshop results to ensure compatibility with international coral reef monitoring activities.

A new approach to fisheries management in Hawai'i was exemplified by the adoption of new rules for bottomfish management and population restoration through the establishment of closed fishing areas encompassing about 20% of known bottomfish grounds. Development of the bottomfishing rules was done in concert with representatives from the fishing community and represented a major shift by DLNR towards community involvement in management. A strong parallel research program was initiated to increase the knowledge base for better management and to assess the effectiveness of the regulations. The research has already led to important discoveries

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about the life histories of the two commercially important species, onaga and ehu, that have declined most severely. Using innovative technology, such as manned deep-water submersibles and remotely operated vehicles, scientists have begun to better understand both the habitat and assess stocks of these important fisheries resources.

Also during the biennium, the division took steps to form a community-based task force in West Hawai'i to improve reef fish abundance and reduce serious conflicts between reef fish collectors, dive tour operators and other resource users.

More attention is being paid today to recreational fishing development and opportunities. For example, the successful mullet stock enhancement project in Hilo led to new rules, proposed by fishermen, which expand the boundaries of the Waiākea Public Fishing Area, prohibit the take of pua (small juvenile mullet), and limit adult fish and crab catches. On O'ahu, the alien water hyacinth which rapidly overgrew the Wahiawā Public Fishing Area in 1995-96 was almost eradicated with considerable staff and community effort. Two organized recreational fishing groups that focus on the Wahiawā Public Fishing Area proposed an unprecedented catch-and-release regulation for restoring the two primary game fish populations, tucunare and largemouth bass, that had been decimated by certain illegally introduced alien fishes. The alien fish preyed on the young bass and tucunare, which could not then repopulate to sustainable levels in the face of fishing pressure. These rules have been implemented, and their effectiveness will be monitored.

The following are program descriptions and accomplishments for FYs 1996-97 and 1997-98:

COMMERCIAL FISHERY AND AQUACULTURE PROGRAM

PROGRAM DESCRIPTION.

This program supports commercial fisheries through analysis of catch patterns and development of methodologies to sustain and enhance commercial fisheries.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Monitored and maintained a total of 59 fish aggregating device (FAD) sites statewide. Some 747,000 pounds of pelagic fishes were caught around the FADs during slightly more than 7,000 fishing trips. Thirty FADs were replaced and light pack maintenance was performed for on-station FADs.
- Released coded-wire, tagged mullet fingerlings in Hilo Bay and adjacent sites. Surveyed fishermen to identify and collect tagged mullet that are entering the fishery.
- Established a Bottomfish Task Force composed of fishermen, scientists, resource managers, and other interested parties, to develop a management plan to protect and restore crucial bottomfish stocks.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Completed preparation of draft bottomfish rules to restore stocks of six species of snapper and one grouper, two of which (onaga and ehu) are believed to be at critically low levels. Rules were drafted with input from members of the Bottomfish Task Force and were implemented in 1998.
- Funded various research projects related to bottomfish management, including identification and characterization of critical habitat, particularly nursery grounds; development of capture methods

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and techniques to maintain fish in captivity for growth and survival studies; genetic and otolith analyses of fish from different areas to determine population structure.

- Conducted public meetings on Kaua'i, Maui, and O'ahu to provide information and solicit input from various user groups participating in the akule fishery.
- Successfully spawned native striped mullet at the State Fishery Station in Hilo. Continued tagging and release of fingerlings into Hilo area waters, and analysis of recruitment into fishery through recaptures.
- Initiated revision of fish catch report form to improve catch and effort data, and landing revenue data.
- Began work on a new commercial fish dealer reporting system designed to automate collection and processing of data. The new system will reduce paperwork, enhance data processing, and facilitate reporting through electronic transmission of data. It will also improve the quality of data by cross-referencing sales reported by fishermen, place a more accurate value on the commercial fishery, and provide better size-weight frequency data.

AQUATIC RESOURCES PROTECTION PROGRAM

PROGRAM DESCRIPTION.

This program preserves and enhances native and other resident fish and aquatic species, including their habitats, through active protection and other management measures.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Conducted annual marine surveys of all ten Marine Life Conservation Districts, three Fisheries Management Areas, and four other sites statewide. Conducted additional coral reef monitoring at Molokini Shoal, and monitored several sites along the Kona coast to study impact of aquarium fish collecting and tour diving.
- Established Hawai'i Administrative Rule (HAR) 13-60, Kīholo Bay Fisheries Management Area, Hawai'i island, to protect green sea turtles from gill nets.
- Completed subsistence fishing pilot demonstration project at Mo'omomi-Kawa'aloa Bays, Moloka'i, as required by Act 271 of the 1994 Legislature.
- Sponsored annual conference of the Western Association of Fish

The ocean brings in over $3 billion each year in gross revenue, through commercial fishing, ocean recreation, shipping, aquaculture and research and development.

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and Wildlife Agencies, involving over 300 resource managers, scientists, and administrators from 17 western states and two Canadian provinces.

- Prepared evaluations for 259 requests for technical guidance, including permit applications, environmental impact statements, land title proceedings, agency project proposals, and other related matters.
- Continued studies focusing on impacts of erosion, sedimentation, longshore transport, turbidity, runoff, reef overgrowth, nutrient and pollution uptake, etc. on inshore fish habitats.
- Continued compiling and documenting recommendations to revise fisheries management and monitoring practices, including changes in regulations based on biologically recommended minimum size and seasonal restrictions, gear restrictions, comprehensive stock management, catch limits, and increased community involvement.
- Conducted curriculum workshops and presentations for 137 teachers; reached over 5,200 students through classroom presentations; conducted conservation education courses for 1,818 participants.
- Continued airing 30- and 60-second television spots on catch-and-release, fishing safety, marine debris, and releasing exotic fish species.
- Conducted fishing survey targeting local fishermen with questions pertaining to their views, opinions, and experiences fishing in Hawai‘i.
- Produced division newsletter *Currentline* to provide communication link with general public about division's programs and projects.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Supported Act 243 of the 1998 Legislature, which authorizes the Department to assess civil penalties for fishing violations; the option now exists to assess monetary fines rather than criminal penalties.
- Provided technical assistance to Moloka‘i residents wishing to establish a permanent community-based subsistence fishing area under the auspices of Act 271 of the 1994 Legislature.
- Sponsored International Coral Reef Monitoring Workshop in cooperation with the East-West Center; presentations on reef monitoring programs and workshop discussions on monitoring techniques, database management, and community involvement attended by over 100 scientists, researchers, managers from around the world, and the public.
- Prepared evaluations for 298 requests for technical guidance, including permit applications, environmental impact statements, land title proceedings, agency project proposals, and other related matters.
- Conducted annual marine surveys of all ten Marine Life Conservation Districts, three Fisheries Management Areas, and two other sites statewide. Continued additional coral reef monitoring at Molokini Shoal, and monitored several sites along the Kona coast to study impact of aquarium fish collecting and tour diving. Surveyed ‘Āhihi-La Perouse Bays and Cape Kīna‘u, Maui to assess status of marine resources within and outside the area.
- Intensified environmental monitoring of Kāne‘ohe Bay, especially with regard to introduced *Kappaphycus* algae to evaluate extent of spread and possible remediation.

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- Completed assessment of sea urchin (wana) populations at Old Kona Airport Marine Life Conservation District in cooperation with local kūpuna (elders) and other community members. Prepared draft of administrative rule to allow traditional gathering of wana for home consumption.
- Expanded involvement with Department of Education's Distance Learning Technology program to present information on aquatic resources to 200 Hawai'i classrooms and an estimated 330,000 mainland viewers.
- Continued airing 30- and 60-second television spots on catch-and-release, fishing safety, marine debris, and releasing exotic fish species.
- Established community volunteer program to monitor public beaches where monk seals "haul out" of the ocean. Produced public service announcements focusing on responsible interaction with marine mammals and sea turtles.

RECREATIONAL FISHERIES PROGRAM

PROGRAM DESCRIPTION.

This program protects, restores, and conserves fishery resources; increases the quality, quantity, and diversity of recreational fishing opportunities in both fresh and salt water; and enriches the leisure time of people of all ages by providing opportunities and facilities for developing skills and participating in other non-organized outdoor recreation such as snorkeling, underwater photography, and nature studies of aquatic organisms and their habitats.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Constructed over 2,000 fish habitats from donated concrete, and deployed most habitats at Maunalua Bay and Wai'anae artificial reefs, O'ahu. Scuttled a 43-foot ketch at 'Ewa deepwater artificial reef, O'ahu. Monitored resident fish populations on artificial reefs at Maunalua Bay and Wai'anae, Keawakapu (Maui) and other potential artificial reef sites.
- Conducted surveys of Wai'āhole Stream, O'ahu, to monitor effects of stream restoration, including studies of fish abundance and diet, hinana recruitment, and atyid shrimp distribution. Conducted studies of fish diet and recruitment in Mānoa Stream, O'ahu.
- Surveyed a variety of streams and other aquatic habitats statewide to determine presence or absence of native and exotic species, and characterize migration of native species.
- Continued manual control efforts for removal and eradication of water hyacinth from Lake Wilson, O'ahu. Removed over 23 acres of the plant, which could ultimately produce anoxic conditions and massive fish kills.
- Evaluated 49 proposed activities for potential impact on freshwater fisheries, habitat concerns, and fishing activities.
- Produced eleven journal publications reporting studies on native freshwater ecosystems. Completed editing and publication of the Proceedings of the October 1994 Hawai'i Stream Restoration Symposium.
- Closed the Waikīkī -Diamond Head Shoreline Fisheries Management Area to fishing for one year from January 1, 1997, and monitored fish population trends.
- Opened the Nu'uanu Public Fishing Area, O'ahu for fishing during three periods totaling 42 weekend days, during which 913 channel catfish were taken by 4,088 anglers. About 3,000 juvenile catfish were stocked.

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- Opened the Kōke'e Public Fishing Area, Kaua'i to fishing for rainbow trout during August and September. A recorded 2,911 anglers took 7,666 fish. About 50,000 trout fingerlings were stocked in the reservoir.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Constructed 3,780 "Z-shaped" fish habitats with donated concrete. Added 1,791 of these, along with 1,200 tons of concrete pier pilings, to the Maunalua Bay Artificial Reef, O'ahu. Scuttled a 63-foot vessel at the Keawakapu Artificial Reef, Maui, and a 110-foot Navy barge at the Maunalua Bay Artificial Reef. Monitored resident fish populations at existing and potential artificial reef sites.
- Amended HAR 13-62 to establish "catch and release" regulations for bass and tucunare in Lake Wilson, O'ahu, effective July 1998.
- Continued surveys in a variety of streams and other aquatic habitats statewide to determine presence or absence of native and exotic species. These included 24-hour monitoring of selected streams to characterize hatching and downstream migration of native stream fish larvae.
- Provided funding for research that discovered the homing mechanism for native gobies as they return from the initial oceanic portion of their life cycle to stream habitats. The discovery of specific pheromones as homing cues is of crucial importance to stream management, especially with regard to restoring native fish populations.
- Supported research into effects of introduced parasites on native stream fishes, and funded production of a manual for biological monitoring and assessment of Hawaiian streams.
- Opened the Waikīkī-Diamond Head Shoreline Fisheries Management Area to fishing for one year from January 1, 1998, and monitored fish population trends.
- Opened the Nu'uanu Public Fishing Area, O'ahu for fishing during three periods totaling 46 weekend days, during which 2,599 channel catfish were taken by 5,041 anglers. About 5,000 juvenile catfish were stocked.
- Opened the Kōke'e Public Fishing Area, Kaua'i to fishing for rainbow trout during August and September. A recorded 2,721 anglers took 10,151 fish. About 50,000 trout fingerlings were stocked in the reservoir. Supported assessment of Kōke'e streams as habitat for year-round catch and release for rainbow trout without annual stocking.

COMMERCIAL FISH LANDINGS BY SPECIES, FISCAL YEAR 1996/97

SEA CATCH BY SPECIES

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
Tuna (unclass)	17,018	16,675	31,616
Aku	2,207,445	2,112,597	2,719,867
ʻAhi (yellowfin)	4,392,781	4,267,745	10,030,155
ʻAhipalaha	3,661,164	3,652,098	4,179,269
ʻAhi (bigeye)	4,015,009	4,003,073	12,063,555
ʻAhi (bluefin)	14,034	14,034	204,673
Kawakawa	10,335	7,453	8,393
Billfish (unclass)	1,214	1,214	723
Black marlin	21,660	21,138	24,305
Blue marlin	1,271,552	1,165,313	1,117,314
Sailfish	16,230	15,692	14,011
Short spearfish	245,913	233,686	217,094
Striped marlin	995,955	967,743	1,248,151
Swordfish	4,490,098	4,460,832	13,279,583
Mahimahi	1,099,501	1,024,448	1,798,470
Malolo	3	0	0
Mola Mola	20	20	9
Monchong	134,840	134,477	221,270
Ono	663,244	599,161	1,216,410
Opah	631,491	631,251	713,508
Walu	570	370	277
Alfonsin	78	78	227
ʻEhu	42,515	40,007	155,126
Onaga	101,823	96,851	551,178
Golden kali	104	100	244
Hāpuʻupuʻu	60,541	58,029	197,978
Hogo	3,047	2,804	14,480
Kāhala	7,697	417	585
Kalekale	33,597	30,658	84,435
Lehi	12,002	11,302	34,246
ʻŌpakapaka	268,288	256,834	1,120,913
Randall's snapper	15	15	36
Taʻape	59,472	54,077	50,570
ʻUkikiki	8,438	8,000	22,292
Uku	121,519	116,610	312,830
Yellow-tail kali	41	0	0
ʻOmaka	281	280	901
ʻOmilu	3,647	2,869	4,996
Ulua (unclass)	36,449	29,706	61,788
Ulua (buta)	62,050	59,172	98,242
Ulua (dobe)	259	197	559
Ulua (gunkan)	1,288	1,125	2,070
Ulua (kihikihi)	559	328	494
Ulua (menpachi)	478	423	969
Ulua (papa)	7,884	7,359	15,067
Ulua (paopao)	2	2	6
Ulua (white)	10,902	9,786	10,501
ʻAʻawa	3,085	2,767	2,893
ʻAhaʻaha	208	192	147
Āholehole	4,433	3,991	9,812
Akule	540,156	484,814	861,434
ʻAlaʻihe	134	128	289
Amaʻama	6,305	5,593	15,058
Awa	483	429	584

SEA CATCH BY SPECIES, CONTINUED

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
Awaʻawa	514	506	617
ʻĀweoweo	6,009	5,571	14,695
ʻEa	144	122	131
Hahalalu	20,783	19,952	41,394
Hilu	18	18	13
Hīnālea	222	188	127
Humuhumu	209	25	17
ʻIheʻihe	3	1	2
Kākū	26,914	24,891	19,201
Kala	10,115	9,049	10,329
Kamanu	5,906	4,873	6,569
Kaweleʻa	4,273	3,575	4,801
Keʻokeʻo	110	22	31
Kole	2,289	1,255	2,362
Kūmū	4,755	4,279	25,420
Kūpīpī	159	127	258
Kūpoupou	103	101	314
Lae	673	563	816
Laenihi	4,489	3,045	18,302
Lauwiliwili	0	0	0
Māʻiʻiʻi	10	1	1
Maiko	3,457	3,427	2,201
Malu	226	218	776
Manini	15,764	14,738	31,371
Manō	14,962	4,488	5,468
Manō (hammerhead)	162	0	0
Manō (kihi)	0	0	0
Manō (mako)	36,416	33,397	35,365
Manō (thresher)	18,215	16,489	13,884
Manō (tiger)	508	293	79
Maomao	2,048	2,030	3,558
Moana	5,526	4,439	14,834
Moana kali	3,339	3,118	20,413
Moi	882	598	2,622
Mū	2,140	2,022	4,644
Munu	115	90	664
Naʻenaʻe	5,612	5,589	4,860
Nenue	10,447	9,526	9,786
Nohu	551	519	1,307
Nūnū	146	118	139
ʻŌlililepa	2,573	2,377	4,668
ʻOʻopuhue	4	0	0
ʻOio	4,189	3,601	4,264
ʻŌpelu	342,148	321,241	495,223
ʻŌpelu kala	3,567	2,917	2,739
ʻŌpelu mama	66	31	63
ʻŌpule	7	7	10
Pākiʻi	33	32	35
Pākuʻikuʻi	210	164	208
Palani	29,582	29,231	36,828
Pānuhunuhu	1,308	1,295	3,848
Pānūnū	47	46	134
Poʻopaʻa	626	601	1,180
Poʻou	36	14	21

COMMERCIAL FISH LANDINGS BY SPECIES, FISCAL YEAR 1996/97

SEA CATCH BY SPECIES, CONTINUED

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
Pualu	4,183	4,070	5,397
Puhi (unclass)	642	601	452
Puhi (white)	209	168	206
Roi	381	252	553
Saba	118	117	250
Summer mullet	62	21	59
Tilapia	3,179	2,906	2,339
Toau	1,680	1,551	4,698
Uhu	29,664	27,255	61,884
Uouoa	856	851	2,103
ʻŪpapalu	43	30	42
ʻŪʻū	47,324	44,342	131,534
ʻUʻukanipō	234	202	514
Wahanui	201	123	116
Weke	34,837	33,848	58,129
Weke pueo	23	4	12
Weke ʻula	25,312	22,766	67,563
Slipper lobster	5,337	5,291	61,115
Spiny lobster	32,169	30,242	468,967
Crab (unclass)	238	158	571
ʻAʻama crab	1,037	933	6,523
Kona crab	29,033	24,123	114,174
Kuahonu crab	5,474	4,887	15,779
Samoan crab	22	15	125
ʻŌpae	310	310	1,550
Shrimp (ensifer)	1,095	960	1,200
Shrimp (laevigatus)	32,694	32,144	169,719
Heʻe (octopus)	19,337	14,627	41,871
Lole (sea cucumber)	54	54	422
Mūheʻe (squid)	2,979	2,454	5,223
ʻOpihi	10,326	9,011	33,936
Pupu	11	11	33
Wana (sea urchin)	30	0	0
Limu (unclass)	823	553	1,900
Limu (kohu)	3,547	3,506	30,499
Limu (manauea)	389	389	1,164
Limu (ogo)	1,488	1,133	3,566
Limu (wāwaeiole)	2,346	2,283	2,947
Black coral	4,990	2,682	68,169
Miscellaneous	13,205	12,947	52,346
TOTAL SEA CATCH	**26,196,349**	**25,442,603**	**54,983,843**

POND HARVEST BY SPECIES

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
ʻAhaʻaha	2	2	0
ʻĀholehole	176	176	457
ʻAmaʻama	128	128	480
Awa	216	216	367
ʻAwaʻawa	562	562	975
Kākū	749	749	2,880

POND HARVEST BY SPECIES, CONTINUED

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
Kaweleʻa	3	3	5
Kupipi	2	2	1
Lae	76	76	76
Moi	1,334	1,334	7,751
ʻŌio	2,350	2,350	3,934
Pualu	237	237	351
Crab (unclass)	60	0	0
Samoan crab	383	371	1,965
Summer mullet	36	36	96
Taʻape	2	2	2
Tilapia	105	105	186
Toau	344	344	1,529
Ulua (unclass)	1,408	1,408	3,288
Limu (unclass)	36,000	36,000	77,000
Miscellaneous	3,338	3,338	10,957
TOTAL POND HARVEST	**47,511**	**47,439**	**112,302**
GRAND TOTAL	**26,243,860**	**25,490,042**	**55,096,145**

SEA CATCH BY ISLAND

ISLAND	LBS LANDED	LBS SOLD	VALUE ($)
Hawaiʻi	3,860,736	3,653,161	6,348,861
Maui	583,090	440,176	1,214,824
Lānaʻi	23,213	17,222	42,935
Molokaʻi	55,092	49,749	170,968
Oʻahu	20,696,035	20,472,403	45,340,650
Kauaʻi & Niʻihau	978,183	809,892	1,865,606
TOTAL	**26,196,349**	**25,442,603**	**54,983,843**

POND HARVEST BY ISLAND

ISLAND	LBS LANDED	LBS SOLD	VALUE ($)
Hawaiʻi	3,362	3,362	11,099
Oʻahu	44,149	44,077	101,204
TOTAL	**47,511**	**47,439**	**112,302**

TOTAL CATCH BY ISLAND

ISLAND	LBS LANDED	LBS SOLD	VALUE ($)
Hawaiʻi	3,864,098	3,656,523	6,359,960
Maui	583,090	440,176	1,214,824
Lānaʻi	23,213	17,222	42,935
Molokaʻi	55,092	49,749	170,968
Oʻahu	20,740,184	20,516,480	45,441,853
Kauaʻi & Niʻihau	978,183	809,892	1,865,606
TOTAL	**26,243,860**	**25,490,042**	**55,096,146**

COMMERCIAL FISH LANDINGS BY SPECIES, FISCAL YEAR 1997/98

SEA CATCH BY SPECIES

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
Tuna (unclass)	44,517	33,235	83,686
Aku	2,198,701	2,103,280	2,636,490
ʻAhi (yellowfin)	3,777,317	3,657,412	8,650,968
ʻAhipalaha	2,518,322	2,474,793	3,094,292
ʻAhi (bigeye)	6,414,064	6,336,450	18,561,291
ʻAhi (bluefin)	9,590	9,590	77,055
Kawakawa	8,429	5,818	7,246
Billfish (unclass)	1,547	713	1,402
Black marlin	10,123	9,422	12,110
Blue marlin	1,406,922	1,286,665	1,337,259
Sailfish	17,425	16,552	22,176
Short spearfish	158,753	148,981	146,499
Striped marlin	557,917	547,246	882,048
Swordfish	3,821,817	3,812,632	9,115,647
Mahimahi	620,985	573,114	1,455,942
Malolo	20	20	38
Mola Mola	436	10	1
Monchong	189,643	187,937	286,196
Ono	660,319	600,809	1,389,616
Opah	618,483	612,789	775,155
Walu	1,408	266	308
Alfonsin	64	37	97
Armor head	9	0	0
ʻEhu	44,926	41,793	155,841
Onaga	115,731	110,686	610,087
Golden kali	92	76	195
Hāpuʻupuʻu	73,222	69,691	199,523
Hogo	3,911	3,567	14,103
Kāhala	24,217	2,420	2,141
Kalekale	30,806	28,045	77,597
Lehi	9,405	8,904	27,365
ʻŌpakapaka	230,409	220,704	1,010,946
Randall's snapper	18	0	0
Taʻape	84,930	72,696	69,783
ʻUkikiki	9,473	8,199	21,614
Uku	105,941	100,617	301,548
Yellow-tail kali	25	0	0
ʻOmaka	279	274	900
ʻOmilu	2,382	1,763	3,231
Ulua (unclass)	43,670	35,170	67,540
Ulua (buta)	41,177	36,960	55,135
Ulua (dobe)	2,954	2,954	4,903
Ulua (gunkan)	445	383	765
Ulua (kihikihi)	1,296	1,106	2,204
Ulua (menpachi)	295	146	248
Ulua (papa)	3,151	2,780	6,260
Ulua (white)	8,385	7,839	9,852
ʻAʻawa	3,059	2,730	3,021
ʻAhaʻaha	263	249	295
Āholehole	3,554	3,182	9,232
Akule	1,402,361	1,259,090	1,740,055
ʻAlaʻihe	180	173	372
Amaʻama	6,258	5,777	16,421
Awa	1,669	1,476	2,019

SEA CATCH BY SPECIES, CONTINUED

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
ʻAwaʻawa	255	223	252
ʻĀweoweo	4,761	4,157	10,438
ʻEa	256	248	269
Hahalalū	66,636	63,531	94,216
Hilu	28	28	21
Hīnālea	189	172	127
Humuhumu	275	22	103
Kākū	19,273	18,097	14,549
Kala	16,088	15,161	17,675
Kamanu	7,058	6,456	8,295
Kaweleʻā	3,366	3,133	4,852
Keʻokeʻo	59	38	44
Kole	3,176	2,315	4,204
Kūmū	5,353	4,931	33,245
Kūpīpī	143	138	158
Kūpoupou	15	15	33
Lae	867	754	1,185
Laenihi	6,179	4,130	21,478
Lauwiliwili	1	0	0
Maiko	3,662	3,621	2,451
Makiawa	21	20	50
Malu	220	204	725
Manini	12,959	12,331	27,431
Manō	24,860	1,989	1,750
Manō (hammerhead)	1,059	0	0
Manō (mako)	49,811	44,938	45,742
Manō (thresher)	31,210	24,962	21,878
Manō (tiger)	3,600	0	0
Maomao	913	882	1,730
Moana	4,550	3,546	11,874
Moana kali	3,875	3,521	25,570
Moi	2,033	1,328	5,811
Mū	2,076	1,936	4,957
Munu	326	313	2,211
Naʻenaʻe	6,274	6,233	5,635
Nenue	9,886	7,871	9,736
Nohu	791	683	1,966
Nūnū	67	56	63
ʻŌlililepa	2,270	2,196	4,246
ʻOio	3,564	2,969	3,413
ʻŌpelu	291,088	276,558	436,602
ʻŌpelu kala	5,522	5,172	5,154
ʻŌpelu mama	40	26	51
ʻŌpule	0	0	0
Pākiʻi	55	46	44
Pākuʻikuʻi	282	258	435
Palani	39,249	38,228	47,134
Pānuhunuhu	1,195	1,160	3,054
Pānūnū	22	15	32
Poʻopaʻa	1,303	1,264	2,919
Poʻou	4	1	2
Pualu	7,730	7,550	9,698
Puhi (unclass)	600	585	394
Puhi (white)	196	97	120

SEA CATCH BY SPECIES, CONTINUED

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
Roi	399	298	626
Saba	34	34	68
Summer mullet	59	53	130
Tilapia	70	0	0
Toau	3,769	3,651	11,893
Uhu	35,913	33,651	77,159
Uouoa	301	297	797
ʻŪpapalu	2	1	1
ʻŪʻū	48,841	45,312	139,143
ʻUʻukanipō	97	91	183
Wahanui	320	223	251
Weke	32,771	30,822	54,339
Weke pueo	4	0	0
Weke ʻula	25,455	21,998	65,765
Slipper lobster	44,516	44,433	421,094
Spiny lobster	57,631	55,637	754,048
Crab (unclass)	220	148	543
ʻAʻama crab	488	448	2,958
Kona crab	29,210	23,292	105,706
Kuahonu crab	16,656	16,517	54,679
Samoan crab	20	8	39
ʻŌpae	1,300	1,143	6,780
Shrimp (ensifer)	280	0	0
Shrimp (laevigatus)	13,210	12,612	86,837
Heʻe (octopus)	25,874	17,879	49,961
Lole (sea cucumber)	77	77	530
Mūheʻe (squid)	5,864	4,432	7,489
ʻOpihi	11,852	10,274	43,130
Pupu	12	6	22
Wana (sea urchin)	16	0	0
Limu (unclass)	916	468	2,571
Limu (kohu)	2,999	2,794	23,865
Limu (manauea)	522	522	1,566
Limu (ogo)	1,556	1,083	3,058
Limu (wāwaeiole)	91	11	28
Black coral	432	379	10,625
Miscellaneous	7,821	6,928	9,034
TOTAL SEA CATCH	**26,306,184**	**25,356,851**	**55,777,659**

POND HARVEST BY SPECIES

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
ʻAhaʻaha	12	12	17
ʻĀholehole	288	288	1,170
ʻAmaʻama	83	83	346
Awa	72	72	108
ʻAwaʻawa	264	264	367
Kākū	626	626	2,435
Kaweleʻa	13	13	16
Kupipi	1	1	1
Lae	61	61	59
Moi	7	7	38

POND HARVEST BY SPECIES, CONTINUED

SPECIES	LBS LANDED	LBS SOLD	VALUE ($)
ʻŌio	2,553	2,553	3,521
Pualu	521	521	778
Crab (unclass)	937	937	2,244
Samoan crab	200	200	977
Summer mullet	27	27	81
Taʻape	4	4	4
Tilapia	187	187	461
Toau	576	576	2,148
Miscellaneous	972	972	2,448
TOTAL POND HARVEST	**7,404**	**7,404**	**17,215**
GRAND TOTAL	**26,313,588**	**25,364,255**	**55,794,874**

SEA CATCH BY ISLAND

ISLAND	LBS LANDED	LBS SOLD	VALUE ($)
Hawaiʻi	3,443,784	3,235,995	6,143,630
Maui	665,254	537,922	1,239,726
Lānaʻi	20,204	13,330	31,294
Molokaʻi	62,115	52,882	187,173
Oʻahu	21,117,947	20,652,530	46,269,053
Kauaʻi & Niʻihau	996,880	864,192	1,906,782
TOTAL	**26,306,184**	**25,356,851**	**55,777,659**

POND HARVEST BY ISLAND

ISLAND	LBS LANDED	LBS SOLD	VALUE ($)
Hawaiʻi	1,374	1,374	4,062
Oʻahu	6,030	6,030	13,153
TOTAL	**7,404**	**7,404**	**17,215**

TOTAL CATCH BY ISLAND

ISLAND	LBS LANDED	LBS SOLD	VALUE ($)
Hawaiʻi	3,445,158	3,237,369	6,147,692
Maui	665,254	537,922	1,239,726
Lānaʻi	20,204	13,330	31,294
Molokaʻi	62,115	52,882	187,173
Oʻahu	21,123,977	20,658,560	46,282,207
Kauaʻi & Niʻihau	996,880	864,192	1,906,782
TOTAL	**26,313,588**	**25,364,255**	**55,794,874**

DIVISION OF AQUATIC RESOURCES

LICENSES AND PERMITS/COMMERCIAL MARINE FISHING, FISCAL YEARS 1996/97 & 1997/98

TYPE	HAWAI'I		MAUI		KAUA'I		O'AHU		MOLOKA'I		STATEWIDE	
	FISCAL 1996/97	FISCAL 1997/98	FISCAL 1996/97	FISCAL 1997/98	FISCAL 1996/97	FISCAL 1997/98	FISCAL 1996/97	FISCAL 1997/98	FISCAL 1996/97	FISCAL 1997/98	FISCAL 1996/97	FISCAL 1997/98
RESIDENT												
Number	896	672	310	307	295	270	1,955	2,222	70	50	3,526	3,521
Amount	$22,400	$16,850	$7,750	$7,675	$7,375	$6,750	$48,875	$55,550	$1,750	$1,250	$88,150	$88,075
NON-RESIDENT												
Number	20	20	4	1	4	1	78	105	0	0	106	127
Amount	$1,000	$1,000	$200	$50	$200	$50	$3,875	$5,250	$0	$0	$5,275	$6,350
SPEC. MARINE PROD.												
Number	43	38	6	6	2	8	131	67	0	0	182	119
Amount**	$150	$130	$15	$18	$5	$20	$365	$190	$0	$0	$534	$357
COMMERCIAL BAIT												
Number	4	8	8	10	6	3	40	43	8	5	66	69
Amount	$4	$8	$8	$10	$6	$3	$40	$43	$8	$5	$66	$69
NWHI*												
Number	1	1	0	0	2	0	13	10	0	0	16	11
Amount	$1	$1	$0	$0	$2	$0	$13	$10	$0	$0	$16	$11
TOTAL												
Number	964	739	328	324	309	282	2,217	2,447	78	55	3,896	3,847
Amount**	$23,555	$17,989	$7,973	$7,753	$7,588	$6,823	$53,168	$61,043	$1,758	$1,255	$94,041	$94,862

* Northwestern Hawaiian Islands (Leeward Islands)

** Fractional amount (less than a dollar) excluded